THE OPTICAL MAGIC LANTERN — JOURNAL — AND PHOTOGRAPHIC ENLARGER.

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CONTENTS.

PAGE.
Notes 65
The Magic Lantern: Its Contruction, Illumination, Optics, and Uses (chap. 9) 66
Experiences of Professor Eadweard Muybridge... ... 68
Gauging the Contents of a Gas Cylinder 68
Odds and Ends... 69
Railway Station Advertising by Means of the Lantern ... 69
The New Limelight 70
Editorial Table 71
Correspondence... 71
Notes and Queries 72

CONTENTS OF No. 8.

Notice—Notes—The Magic Lantern: Its Construction, Illumination, Optics, and Uses (chap. 8)—Marking Lantern Slides—New Limelight—Flashes on Lantern Topics—Lantern Slide Competition—Front Supports for Lanterns—Lantern Slides and Lantern Slide Making—Deterioration of Slides—Editorial Table—Development without a Dark Room—Applications for Patents, 1889—Correspondence—Selections—Notes and Queries.

Notices.

THE *Optical Magic Lantern Journal and Photographic Enlarger* is issued on the 1st of every month, price One Penny, and may be obtained from all Newsvendors, Railway News Stalls, Photographic Dealers, or from the Publishers, at the following rates, post free :—

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Editorial communications must be addressed, The Editor; advertisements and business communications to Taylor Brothers, care of the Publishers, Dorset Works, Salisbury Square, Fleet Street, London, E.C.

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Notes.

A FATAL explosion of an oxygen cylinder occurred on the 23rd January at the Rosehill Works of the Scotch and Irish Oxygen Company, Polmadie. Whilst the foreman was in the act of carrying a cylinder, it unaccountably exploded with great force, injuring him fatally. Portions of the cylinder were afterwards found a quarter of a mile off, altho' fences had to be penetrated in their flight.

* * *

MRS. CARNELL, of Plymouth, was awarded the first prize at a local competition of lantern slides. Both Mr. and Mrs. A. A. Carnell are very enthusiastic amateur photographers. Mr. Carnell has lately won a gold medal for his lantern slide productions, which were on plates manufactured by the Britannia Works Company.

* * *

LARGE hanging letters have lately been erected on the top of the premises occupied by Mr. Walter Tyler, of Waterloo-road.

* * *

WE are in receipt of a number of inquiries about Mr. Greene's photoramic apparatus. If by our next issue the patent rights have been arranged for foreign countries, we hope to give particulars of same.

* * *

ON another page will be found the result of some experiences of Prof. Eadweard Muybridge. We have received a sample of the binding paper alluded to, and find it exceedingly tough. We will be pleased to forward a small piece to any photographic dealer interested on receipt of directed envelope.

* * *

MR. T. H. HOLDING, in a letter in this issue, requests all those interested in the formation of a lantern club to send their names to him. We hope there will be a good response, and feel assured that such a society would do much to further the interests of both lanterns and lanternists.

* * *

WE cannot help thinking of the delightful facilities it will afford those who possess and who love the working of the lantern, to send a set of slides to member A. B., and when they want to amuse their friends in the drawing-room, or give an exhibition publicly, to borrow a set in return from A. B. And what a fine thing, again, it will be for the members of this club if they can have some special tariff from the great slide-makers and dealers. In fact, looked at from whatever standpoint, it is a movement of the highest importance for this popular and rising instrument.

* * *

In connection with the Newcastle-on-Tyne and Northern Counties Photographic Association, an International Photographic Exhibition will be held in the Central Exchange Art Gallery from April 18 to May 3; and at the same time and place a supplementary exhibition of photo-apparatus, appliances, and mechanical printing processes.

The Magic Lantern: Its Construction, Illumination, Optics & Uses.

CHAPTER IX.—GENERAL MANAGEMENT OF THE LIGHT.

Oil Light.—It is a well-known fact that the same lantern outfit in the hands of exhibitors possessed of different qualifications may give either good or bad results according to the good or indifferent management it receives at the hands of the operator. Although it may at first appear a simple enough matter to "run" a lantern, yet to get everything in readiness with dispatch, and to keep everything going smoothly throughout a lantern exhibition, requires a certain knowledge and deftness attainable only by practice and experience.

In the case of oil illumination it is wholly under the control of the operator whether the lamp will give off an unpleasant smell or not, although too often the lamp itself is blamed when the fault should have been attributed to inexperience, or want of knowledge of the requirements of the instrument.

The lamp and wick should be taken to the hall or room where it is to be used in a thoroughly dry and clean condition, and the oil carefully poured into the reservoir by the aid of a funnel, not even the smallest quantity being allowed to go on the outside of the lamp. Until it is to be lighted, the wick must be kept turned down, and not allowed to protrude from the tube in which it travels, else will the oil, by capillary attraction, run down the outside of the burner, for it is surprising what a large surface a small quantity of oil will spread over, especially after the surface is warm.

The wick or wicks should be trimmed with scrupulous care, and no unevenness of surface must be allowed, as ragged edges cause "points" at the top of the flame, which will give off smoke before the wicks are properly turned up. This also greatly diminishes the quality of light that would otherwise be attainable.

When a lamp is turned up and is placed near the condensers—especially if the latter are very cold—it is not an unfrequent occurrence for them to crack. It may be argued that the lamp can be turned down for a time until all the surroundings get warmed; but it will be found that an oil lamp if turned below a certain point will emit the unpleasant oily smell so much complained of in this connection. This point of limit in turning down varies according to the adaptation of the fittings around the flame.

The better plan for warming the condensers is, in the case of compound ones to unscrew the component parts, and warm them very gradually in front of a fire. The separation of the lenses prevents the condensation of vapour in the space between the two glasses.

The objective should also be warmed in like manner, and by the time this has all been done and replaced, the surroundings will have been heated sufficiently to prevent condensation.

When using a lamp of the Sciopticon class, the wicks on the outside should be turned up first both the same height, then the inside ones, and all adjusted just short of smoking.

Safety or Blow-through Jet.

This light is produced by a fine stream of oxygen being blown through a flame, so as to make it impinge on a piece of lime, which thus becomes incandescent, and throws out a powerful light. The flame may be produced either by pure hydrogen gas, or by ordinary house gas, and as the latter is, generally speaking, always at hand, we will consider that it is to be used for the production of the flame, although pure hydrogen will produce a slightly whiter flame. Still, the extra trouble of conveying a supply will hardly compensate for the slight difference in the quality of the light.

The oxygen may be supplied either from a gas bag or from a cylinder containing the gas in a compressed state, but in either case we will suppose that the supply is at hand, and will not deal with the making of the gas.

If the bag be of English make, the tap will be found to be at the wedge end, but in America many have the tap fitted at the wide end; not, however, that it makes any material difference.

The bag is placed between hinged boards, and a sufficient weight put upon the uppermost one. This is to obtain a steady pressure.

A lime (soft) having been placed upon the pin for the purpose in front of the burner, a sufficient length of india-rubber piping is connected with the gas-bracket and the hydrogen tube of the jet, and another length of similar piping is made to connect the reservoir containing the oxygen with the oxygen jet. In order to prevent any leakage at the part where the rubber tubing is sprung on, many tie a piece of twine around the end to bind it, but the same object may be attained if the end of the piping be rolled back on itself.

All being in readiness, the hydrogen is turned on and lighted, and the lime allowed to become gradually warmed, after which the oxygen may be played through the flame, and on the lime. A little adjustment of the supply of both gases will be necessary to get the most satisfactory results, and the lime itself must be allocated to its correct distance from the orifice of the burner. As the supply of oxygen in the bag becomes diminished, it may be necessary to increase the weight placed on the pressure board.

If a cylinder for the oxygen be used, the connections are made in the same way, but in this case it is desirable to attach a regulator to the cylinder, and it is to this that the piping is secured. The cylinder may, however, be employed without the regulator, but it entails recurrent attention to the tap forming the outlet, for, as the pressure becomes less, so does the intensity of the light; and in attempting to put on a little more pressure it is a frequent occurrence to allow a sudden outlet of the gas, which invariably puts out the flame in the lantern. This much may be said, that if once a regulator is used, its advantages are so apparent as to necessitate its use in future.

MIXED JET.

When oxygen and hydrogen are mixed in certain proportions they will, in conjunction with the lime, give a light far surpassing in brilliancy that given by the form of jet previously described; but with this light it is necessary that care be taken that all the instructions are complied with, for under certain conditions the admixture of these gases may cause a slight snapping explosion if a light be applied to them; but with care and attention to the requirements, it is quite safe, and, as we have said, will produce a very brilliant light. In this light both of the gases must be under similar pressure; hence, if the oxygen is to be supplied from a bag, the hydrogen should also be contained in a like receptacle, or if a cylinder is employed for the oxygen, another should be used for the hydrogen supply, and under no pretext should the gas main and a cylinder of compressed oxygen be used in conjunction.

With regard to the attachment of the piping, the remarks previously made will suffice.

When the cylinders are used, on no account should "regulators" be omitted, as there might be a chance of the admixture of the gases if the pressure from one cylinder exceed that of the other. Care must be taken for the same reason that the weights are not removed from the bags until the taps both at the lantern and at the bags themselves have been turned off.

Hard limes give the best light with the mixed jet. There are certain movements requisite for the proper adjustment of the jet, and the more these adjustments are under the easy control of the operator the more matters are facilitated, and the general management of the light simplified. The motions required are—a means of adjusting the proper distance between the limes and nozzle of the jet; of turning, raising, and lowering the lime; raising or lowering the complete jet, and giving a side motion to the same, moving it nearer to or further from the condenser, and of turning the gases off, excepting such as is allowed to go through a bye-pass; and when all these movements can be under control from behind the lantern without opening the door, so much the better. Mr. J. H. Steward has introduced a jet fulfilling all those requirements (Fig. 35). In the first form of this jet, the up, down, and side motions could only be brought into effect by opening the door of the lantern, inserting the hand, and adjusting the screws; but in the latest models a set of bevel wheels have been added, by which the up and down motion is also controlled from behind, whilst a lever extended to the back of the lantern renders the side motion also under control from the same position as the other movements.

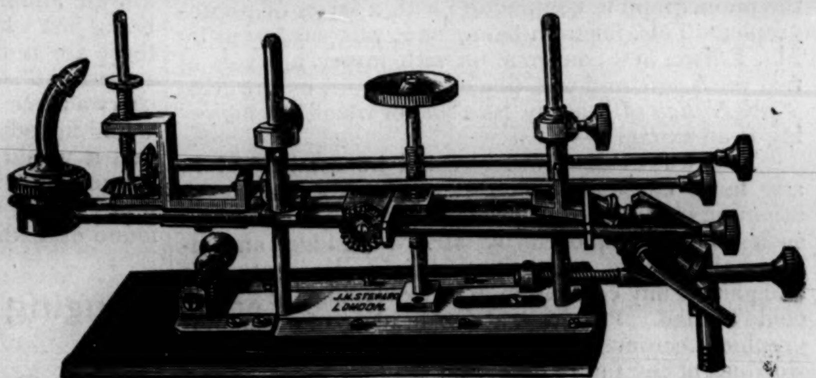

FIG. 35.

(To be continued.)

Experiences of Professor Eadweard Muybridge.

DURING a recent interview with Mr. Muybridge he furnished us with the following results of his experience.

Etching on coated glass, or photo-etching, is alluded to as being something of recent date, and the invention is claimed by various parties. As long ago as 1858, the late Mr. Charles Nahl, of San Francisco, gave me two prints from etchings he had made on coated glass plates. The subjects were a grizzly bear and a Californian lion. These prints I still have in my possession. Mr. Nahl was very clever at this style of work, and he was one the first to introduce retouching on negatives, his pictures being at one time the admiration of all who beheld them, owing to the softness and beauty imparted to them by the manipulation of retouching.

Many lecturers adopt the plan of tinkling a bell when the time for changing a view on the screen has arrived. This I think is quite unnecessary, as it announces to the whole audience that a change is about to take place, and it is otherwise apt to attract attention. Others show a coloured light in connection with the reading lamp at their desk. This is less conspicuous, but it necessitates the operator keeping his eyes towards that part of the hall where the lecturer is; whereas he might be better employed attending to the management of the lantern. An electric bell or rap at the lantern itself is an improvement on either of the foregoing, but it means having a wire to communicate with the lecturer. In the course of my practice I have discarded all these means of communication, and find that the simplest method is the best:—I keep in my vest pocket, or in my hand, one of the small metal castinettes similar to those sold on every street in London eight or ten years ago, but now seemingly very scarce. A couple of clicks of this instrument suffices to intimate to my operator that another picture is required on the screen, and the sound is of such a nature as not to call the attention of the audience to it. After trying all and sundry means of communicating with the operator at the lantern, I consider this the simplest and most satisfactory method.

I understand that it has been said that a London gentleman claims to be the first to suggest the use of the phonograph in conjunction with a series of photographs. This, far from being new, was suggested by Mr. Edison in a conversation with myself upwards of two years ago, and was placed on record by the *New York Nation* of January 19, 1888, of which the following is an extract:—

"Now it is evident if there could be established in any large city—as in connection with a literary or scientific institution—a permanent battery of cameras such as was employed by Mr. Muybridge, an imperishable record of the figure, height, dress, carriage and gait of any eminent man in or visiting the gallery could be had. Posterity, at the bidding of our photographic necromancers, could call up any of these worthies at any future date, and see him move across the stage with a startling verisimilitude. Nay, we may have his very 'walk and conversation,' and could read our Lowell's line in two ways, as:—

"'*One of Plutarch's men talked* (walked) *with us face to face*.'

"The phonograph, at the same time, as we may anticipate from its ultimate perfection, might repeat audibly to the same audience a passage read aloud by the personage in question, on the occasion of sitting (or walking) for his portrait before the battery.

"A collection of such recitations would furnish invaluable examples of the speech of the cultivated at any given epoch."

The slides which I employ are not of the usual 3¼in. square, but are 3¼in. by 4in. I find this size more convenient for my purpose, as it enables the name, number, and particulars to be placed on the face of the slide instead of on the edges.

In naming my slides I do so at the right hand end of the picture, so that the name may be seen as it is being taken out of its stock box. A mere turn of the wrist suffices to bring it into the necessary position for inserting it in the lantern carrier.

I adopt a simple method of marking the edge of the slides, so that there can be no mistake about their being all in correct position in their respective boxes. Near the lower right hand corner I mark a black strip on the end of each slide in such manner that when they are placed together the mark will appear as a continuous black line drawn across a portion of the ends on the binding. When the slides are end on in their boxes, the finger and thumb are made to grasp the slide just at the corner where the black mark is. This method enables one to ascertain at a glance whether all the slides in a box are lying in their correct position.

Many colours of binders for lantern slides have been lately introduced and their use advocated. These and other binders are sold in this country in strips of about the length required for a 3¼in. by 3¼in. slide; but when one is using binders in any quantity they are apt to soon have a mass of entangled strips in front of them, which are liable to become torn and otherwise damaged.

I see no reason why lantern slide bindings should be of a dark colour at all, and I invariably use a binding of a dead white colour, and instead of buying it cut up in short lengths, I get it in a roll of upwards of a hundred yards, gummed, and of the requisite width.

I have, however, failed to procure it in this country, although in America it is widely sold, and is well-known under the name of "*stick-paper*." Besides being just what is required for binding lantern slides, there are numerous other uses that will suggest themselves, and so handy do I consider it that I invariably carry a piece with me. If trade agents in this country would introduce these rolls of stick paper I feel assured that it would be greatly appreciated, for not only in connection with slides and photography in general is it of use, but from a domestic point of view it will be found exceedingly handy.

—:o:—

Gauging the Contents of a Gas Cylinder.

WHEN one is not possessed of a gauge, it is by no means an easy matter to ascertain the quantity of gas contained in a cylinder. If a bag is employed for the purpose of holding the supply of oxygen, the quantity of gas may readily be approximated at a glance, but with the cylinder, mistakes are liable to happen, and one is placed in a predicament when giving an exhibition to find that a gas bottle, which was supposed to contain say ten cubic feet of gas, had in reality only two or three feet. If a further supply is at hand the substituting of one bottle for another is neither a difficult nor a long task, but to find that the supply has ceased in the midst of an entertainment and no more gas is to be obtained in the neighbourhood, places both the lecturer and the operator in an awkward position.

At a recent lecture given by Dr. Dallinger at New Court Congregational Church, Tollington Park, N., the lecture, which was illustrated by means of the lantern, had not progressed far before it was apparent that the oxygen had given out, and no further supply being at hand, messengers had to be despatched to try and obtain another cylinder in the neighbourhood. During the interim Mr. McDougall addressed the meeting on his recent action in connection with music halls. It having been ascertained that no oxygen could be obtained within reasonable time, it was ultimately announced that the audience could either have the entrance money returned or be supplied with tickets for a subsequent date.

Many firms make a practice of gauging the quantity of gas contained in each cylinder at the time it is delivered, but when part of the contents only are used on one occasion, it is well for the operator to satisfy himself before using from it a second time that it contains a sufficient supply for his purpose. When the cylinder is "hired," it might be found advantageous to also hire a gauge. Those who buy their cylinders outright will naturally possess themselves of the means of arriving at the contents.

Odds and Ends.

"When found, make a note of."

In a recent number an enquirer asked how to ascertain the quantity of oxygen gas in a steel cylinder. The obvious reply was a reference to a pressure gauge, but it may be of interest to many to know that this adjunct, though useful, is not a necessity. A plan which has often been found of value, and which was described in the *British Journal of Photography* some time since, consists of simply weighing the gas. The operation is as follows: Weigh accurately the cylinder as received, say 16lb. 2oz.; weigh it again after using—result, say 15lb. 9oz.; quantity used, 9oz. As each ounce of oxygen represents ·7 of a foot, 9 by ·7 is equal to 6·3, or about 6¼ft. of gas used, and the balance still on hand. If the cylinder be the user's own, it is convenient to keep a note of its weight empty, and then the actual weight will give the quantity of gas in stock, and will enable the user to check the quantity of gas supplied when the cylinder is sent to be filled. I keep all the weights of my cylinders in this way, and have always found good weight from the "Brins" Company.

* * *

Messrs. Vevers, of Leeds, have no doubt seen it to be a good business notion to publish coloured strips for binding lantern slides, but it must not be supposed, as suggested by "Bull's Eye," that the idea is new or original. It has been in use in the North London Photographic Society for a long while, having been introduced by one of their members and noticed in the journals some two years ago. Other London societies have also worked on the same lines until the fashion has spread from London to Leeds.

* * *

I am glad that the value of paste *v.* gum is being asserted in this connection. The other day I had to exhibit a number of slides from a well known London house, and the dilapidated condition of the bindings was a fruitful source of difficulty. The repeated heating of the slides in lanterns had made the gum chippy, and some slides were almost unclothed, while others were ragged. I have never found this happen with good paste, which sticks at once, does not require the slips to be prepared beforehand, and will stand any reasonable wear and tear.

* * *

So benzoline is to beat ether for light producing. Mr. Scott, no doubt, in his paper, describes his own experience, but it certainly runs somewhat counter to the usually accepted opinion that pure hydrogen gives a greater heat than carburetted hydrogen or coal gas. Coal gas hitherto has been considered as a substitute for the pure article, but it now seems that the idea is all wrong. Certainly it is the addition of the carbon that produces the light under ordinary conditions, and the more carbon (within practicable limits) the more light; but in the oxy-hydrogen light the conditions are so largely altered that experience is needed to determine which has the advantage. Meanwhile it is of interest to notice that the process of enriching coal-gas with hydro-carbon by means of a saturator is not new, but has formed an important feature of various gas processes for many years, as for example the "air gas" process of, say, fifteen years ago, and several others since. The Showman.

Railway Station Advertising by Means of the Lantern.

Frames of about four feet square are shortly to be erected at the principal railway stations in this country for the purpose of displaying certain transparencies for advertising purposes.

The frame alluded to is to contain a sheet of opal glass, upon which, at night-time, the picture is to be projected, but instead of the optical arrangements being placed in front of the screen they are situated directly behind it, and the image of the slide thrown by means of reflection.

The illumination is obtained from an ordinary gas burner, immediately in front of which is placed the condenser. Then in turn comes a disc nearly the full size of the frame, which contains about two dozen apertures in which may be fixed the slides for exhibition. This slide disc is rotated by suitable clockwork, which allows of each advertisement being left in front of the condenser for half a minute. At the requisite distance in front of the slide is placed the lens by which the image is projected upon a circular mirror in front, inclined at the necessary angle to reflect on to the opal glass, which serves as the screen.

To operate this instrument, it is merely necessary to wind up the clockwork once a week (the glass being turned up and down by its agency at stated hours) when each slide contained in the disc will, in turn, be presented upon the screen for about half a minute.

A company has been formed to introduce this novel and effective means of advertising. The optical portion of the apparatus is now being constructed and arranged by Mr. W. Chambers, of Featherstone-buildings, Holborn.

The New Limelight.

UP till recently the only means of obtaining a powerful light for the lantern was the oxy-hydrogen limelight, maintained by the consumption of two bulky gases—oxygen and coal-gas—stored in gas-bags. The modern system of compressing gas into cylinders has increased the portability and convenience of oxygen, without adding much to the cost; but compressed coal gas is considerably more expensive than the former plan of using gas bags.

In order to avoid this expense, attempts have been made to replace coal gas by some liquid, which is easily vapourised. These attempts have resulted in ether saturators being put on the market. The earlier vessels were imperfect, explosions occasionally took place, and ether saturation fell into disrepute.

A scientific champion then came to the rescue, in the person of Rev. T. F. Hardwick, who invented the pumice chamber, which was found proof against the penetrating oxy-hydrogen flame. Then Mr. Ives, of the United States, patented in that country (but not in this, I believe) a saturator consisting of two cylinders containing rolls of flannel, which was found to be safer than unstuffed vessels.

The fluids used with these saturators were of the most volatile description, viz., ethers boiling under 100 deg. Fahr. The common ether did not give satisfactory results, so petroleum ether and anæsthetic ether of low boiling points and high prices are now recommended.

These volatile and expensive liquids are hard to get and risky to keep; the railway companies do not care to carry them, and practically they are only available for single lanterns. In warm rooms, and with jets of small bore, armed with pumice protectors, dissolving can be accomplished, but as a rule, persons possessing ether saturators prefer using them with single lanterns.

A want is thus felt in lantern circles for a saturator which is suitable for dissolving, which cannot explode, which is not liable to give pops or cracks, which is simple in its working, and which will yield a brilliant light by the consumption of some fluid that is cheap and easy to procure.

This want I have endeavoured to satisfy by means of an improved apparatus capable of being used with any inflammable liquid boiling under 200 deg. Fahr., and which has been styled the Warm Bath Benzoline Saturator.

It seems a very simple idea to gently warm a stuffed vessel containing benzoline, with the view of increasing the amount of vapour imparted to oxygen gas passed through; but this idea was so hard to hit, that a year's experiments in leisure hours were requisite before success was achieved.

Starting with the notion of boiling benzoline, and devising sundry pieces of apparatus for the purpose, a boiling-water bath was finally adopted for applying heat safely to the benzoline vessel. On being tested, the boiler proved an utter failure, for it was quite incapable of producing benzoline steam; but by a fortunate arrangement of air-tubes in the interior of the vessel, it was found to be an excellent saturator.

Air blown through the tubes became heavily charged with inflammable vapour, and could be burnt as though it were coal-gas.

After a series of experiments deemed necessary to test the safety of the vessel, the results of which were satisfactory, the apparatus was connected to the mixed gas jet of a single lantern, in the manner customary with ether saturators. A happy surprise was in store for the experimentalist. No increase of light had been anticipated, but as soon as the jet taps had been adjusted, the extreme brilliancy of the picture on the screen showed at once that the coal-gas limelight, hitherto deemed the most powerful illuminant for the lantern, must now take a back seat, while the benzoline limelight came to the front in its place.

These early experiments were conducted out of doors in summer evenings, with great precautions against accident, for the operator had once been rendered *hors de combat* by an ether saturator, and he was disinclined to go through a similar experience on behalf of benzoline. However, not the smallest accident occurred, and confidence became established by degrees, every possible test being applied with the view of securing that most important virtue in lantern apparatus—immunity from accident.

The saturator was far from perfect in its early form, but a refining process took place, in which a certain gentleman, well known in scientific circles, lent valuable assistance by correspondence. He pointed out its weak points, and gave valuable information relating to benzoline and other fluids.

Several vessels on the warm bath principle, differing in design, were successively tested; the principles necessary for a good saturator were found out; the nature of the stuffing and disposition of the air tubes was investigated; while the source of heat provided material for many experiments.

To make a long story short, the saturator now consists of a copper vessel stuffed with wool, and furnished with gasways through the stuffing. This is placed within a case somewhat larger, leaving an annular space between the vessels, which is filled with warm air supplied by a night-light burning in a separate chamber placed alongside the air bath. A heat of about ninety degrees Fahr. is maintained in the air-bath.

The working of the warm-bath saturator is of the very simplest description. The stuffed copper vessel is charged with fluid, and the surplus liquid drained off. The night-light, which is capable of burning six hours without attention, is lit; the three brass nozzles fixed on the top of the saturator are connected by rubber tubing, the one to the top of the cylinder or gas-bag, the others to the jet taps, or in the case of a biunial to the nozzles of the dissolving tap. Nothing more need be done to the saturator; the lantern operator can devote all his attention to other matters, while his manipulation of the jet taps and dissolver is precisely the same as with coal-gas.

ALBERT WM. SCOTT.

Editorial Table.

FROM Messrs. Perken, Son and Rayment we have received *The Magic Lantern, its Construction and Use*. This book contains, as its name implies, particulars and modes of use in connection with lanterns of different construction, and at the latter portion the prices and illustrations of this firm's lanterns and apparatus appear. We observe that in the body of this book the greater portion of our article on the relation of lens to disc, together with the table we published in our August issue, has been reproduced.

Practical Hints and Photographic Calendar, 1890, by W. Tylar, of Birmingham, is to hand. It contains, amongst other things, a very complete price list of photographic apparatus, and several humorous and instructive extracts.

FROM New York we have that long established annual, *Photographic Mosaics*, edited by Ed. L. Wilson. This annual, unlike many others, does not partake of the form of an almanac, but is a record of photographic progress. It contains 135 pages of solid and instructive reading by some of the best writers, and is illustrated with six very pleasing and well executed photo-mechanical prints.

FOR our editorial convenience in making entries the publishers of the *Camera* have forwarded us *The Photographers' Diary and Desk Book*, which contains ruled spaces for each day of the year, interleaved with blotting paper, and also numerous formulæ printed in large clear type, so that if referred to in a photographic dark room, it may be easily decipherable. It is neat, comprehensive, and will be appreciated. (55, *and* 56, *Chancery-lane, E.C.)*

THE *Photographic Quarterly* (January), edited by Ch. W. Hastings, is to hand. It is well illustrated with a Woodburytype entitled "Harmony," a photogravure of Jos. W. Swan and other cuts, and contains eleven articles by well known writers. Among others that by Rev. T. Perkins, on "Common Mistakes and Needless Precautions," will be found both amusing and instructive. *(Hazell, Watson and Viney, Ld., London.)*

MR. WALTER TYLER (London) has sent us his catalogue, the first portion of which is copiously illustrated with cuts of lanterns and lantern apparatus; the second part contains lists of slides, from which even the most fastidious may make selections, as there are upwards of 160 pages of titles, and three columns to each page. The apparatus mentioned is of such a diversified nature, that as space will not permit of our going into detail, we recommend each to obtain the catalogue for himself.

——:o:——

Correspondence.

CONGRATULATORY.

[*To the Editor.*]

SIR,—I have been so busy with my new Paris Exhibition Lecture, that I have not had time to write before and thank you for your capital little journal, which I hope will prove a grand success. I believe there is a large field of usefulness for it, and I wish your venture all success in publishing on the 1st instead of the 15th of the month.

I have read most of the articles, and am pleased with the thorough and practical character of them. I have been using oxygen lately from a cylinder—simply to avoid the trouble of making it—but it does not give quite such a good light as that made *fresh* from chlorate of potash. We use the bags as before for effects; I find them better than the bottles. Wishing you all the compliments of the season.—Yours, &c., B. J. MALDEN.

14, Great Coram-street, Russell-square, W.C.

RELATION OF FOCUS OF CONDENSER AND OBJECTIVE.

[*To the Editor.*]

SIR,—With reference to a query by "N. N.," in your last issue, permit me to point out that in order to get the best results the focus of the condenser should be adapted to that of the objective lens.

I have condensers (two plano-convex lenses) of short focus, that give a brilliant and evenly lighted disc when used with objectives of 6in. focus. With 9in. objectives the above condensers are of no use, and I, therefore, use condensers of similar construction, but of longer focus. These will also give an evenly illuminated disc with the 6in. objective; but the light is very poor, as the radiant has to be withdrawn to a greater distance from the condenser.

I ought, perhaps, to add that the objective lenses referred to are portrait combinations, the light used being the oxy-hydrogen mixed jet.—Yours, &c., W. M. BAYNES.

Torquay, Jan. 15, 1890.

FORMATION OF A LANTERN CLUB.

[*To the Editor.*]

SIR,—Your proposal and that of Mr. Holding to form a Lantern Association or Club will I trust meet with hearty support.

Having taken great interest in the preparation, study, and exhibition of these much admired transparent photographs for very many years, and having worshipped at the shrine of MM. Ferrier and Soulier, in the Boulevard Sevastopol, I am exceedingly anxious to see, if possible, further improvement in the pictures as well as in the apparatus for exhibiting the same. The latter has certainly received during the last few years much more attention; but more can still be done. Compressed gases—ether and benzoline saturators—render the means of illumination now so perfect and easy, that we shall I hope soon be able to give softer and more of Nature's effects on the screen than has been hitherto accomplished; not slavishly confining ourselves to perfectly clear glass for what are termed the highest lights, and to shadowless and somewhat weak photographs (positives), sacrificing thereby many beautiful atmospheric effects and the much desired chiaroscuro.

I shall be happy to become a subscriber to and an active member of any club or association.—Yours, &c.,

SLINGSBY BETHELL.

Chelsea Lodge, Chelsea Embankment, Jan. 4, 1890.

[*To the Editor.*]

SIR,—Will you permit me to call the attention of your readers to a step which I trust now to see taken—viz., to bring together, either by means of a club or association, in a practical form, those who are interested in the work of photographic optical lanterns.

I will not here detail the advantages that may possibly accrue from such an association, except to suggest—(*a*) the development and improvement of the lantern itself; (*b*) to help in popularising it generally; (*c*) to enable those who are fond of so delightful and scientific an amusement to become known to each other, and thus develop their common pursuit; (*d*) to hold in London and the country periodical exhibitions; (*e*) to facilitate the interchange of photographic slides; and (*f*) generally to promote lantern work.

The basis of such an association and its rules remain to be formulated. Meanwhile I wish to put plainly through your columns a very pointed but respectful request—viz.: Will all those who are favourable to the idea forward to me, at 46, Chesilton-road, Munster Park, S.W., or to the Hon. Slingsby Bethell, at Chelsea Lodge, Chelsea Embankment, their names and addresses, in order that they may be invited to a meeting, or informed of any proceedings that may be taken?—Yours, &c., T. H. HOLDING.

46, Chesilton-road, Fulham, S.W.

PHOTO-ETCHING.

[*To the Editor.*]

SIR,—I regret that I have until now overlooked your request that I should forward for your inspection the negatives of which I wrote last month. The large negative I have used for double printing on paper, a view or other subject being printed in the circular space. The two others are, as you will see, for lantern slides. I do not feel inclined to make public the formula for my etching ground; but the principle is so simple, that anyone with the least idea of the etching value—if I may so term it—of different waxes or varnishes will readily compound a ground equally good for himself.—Yours, &c., FRANK R. HINKINS.

Royston, Cambs.

[The etchings received are well executed and answer the purpose admirably.—ED.]

:o:

THE first annual exhibition of the East Dulwich and Peckham Photographic Society was held on January 3, at Shawbury Hall, Lordship Lane, S.E., when fully five hundred specimens of work were on view. The awards were as follows:—Silver medal, Mr. J. F. Kelly; bronze medals, Mr. W. Rice and Mr. Dowling. Certificates were awarded to Mr. T. C. Kirby and Mr. E. Boydell. The third certificate was held over for the lantern slides; but the judges after seeing the work of Messrs. Dowling, Farmer, Gardner, Esler, Boydell, and Kelly, decided that in consequence of the evenness of the work shown by these gentlemen it was impossible to award the certificate to any one of them without injustice to the other competitors. The slides embraced a variety of subjects. The awards were presented by Mrs. Horace Banks. During the evening a selection of vocal and instrumental music was given by various lady and gentlemen friends of the society.

:o:

Notes and Queries.

Lux writes:—"Kindly inform me what proportional size of picture can be projected by the lantern if I use a wide angle lens instead of an ordinary objective. I presume the disc on the screen will be very much larger." *Answer.*—You are entirely mistaken in your ideas of the capabilities of the wide angle lens; it is the focus and not the angle of view that governs the size of the projected picture.

Richard Rolfe.—(1) Without a condenser, very few of the rays of light would reach the lens; and all, excepting those passing through the centre of the picture, would be lost. (2) Instead of forming the screen of two widths with the seam directly in the middle, you will find it better to make two seams, putting a whole width in the centre and the seams on either side. (3) Yes, wet the screen if the spectators are to be on the opposite side to the lantern.

D. G. A.—Write to Messrs. Wilkinson, of Sunderland (see advt. columns for address). We believe they make a speciality of the class of work you mention. The slide you sent to us would not look well when enlarged, as some of the letters have a very rugged edge.

Frank Wood asks:—"When was the iris diaphragm invented, and if it is not patented, can I make one?" *Answer.*—It was fitted to some lenses about thirty years ago. It is not patented; but whether you can make one yourself is a question of mechanical skill, which you can best determine for yourself. It requires great nicety in fitting.

Ch. C. inquires where he can obtain a slide changer (and cost), such as described in the December number, Fig. 31. "I have inquired at several dealers. Some say it is not in the market; others that it is not practicable. Where can I obtain it?"—It is the invention of Mr. B. J. Edwards, Hackney, but we do not know if he keeps them for sale. We have tried it and find it works well with a special form of lantern. If you cannot obtain one, Mr. Brown, 26, Bowling Green, could make it for you, but we do not know exactly what it should cost—probably a few shillings.

Interested.—We cannot here enter into full particulars of the anti-dark room apparatus, but if you call upon us by appointment we shall be pleased to allow you to examine it. We think this is the first one that has reached this country from America.

W. M. Ashman.—Package received with thanks.

H. S. writes:—"Where is the opaque lantern you speak of as the Wonder Camera, by Dr. Foote, to be obtained, and what is its cost?" *Answer.*—We do not know where it can be purchased, nor the price, but would suggest that you write to Dr. E. B. Foote, jun., care of Murray-Hill Publishing Company, New York.

Willis Gordon writes:—"When at a lecture given by Mr. Muybridge, I noticed that most of the photographs of figures were produced in detail, but that representing a galloping horse was black without detail. Why was this thus?" *Answer.*—The reason for this is two-fold. (1) Owing to the form of the instrument employed to impart the idea of motion, only about 25 per cent. of the light can be used, and greater contrast can be obtained when they are in the form of silhouettes; and (2) the figures require to be placed on the rotating plate in a somewhat distorted form, in order that they may be presented upon the screen in perfect form; otherwise, if they were placed upon the plate as they appear, they would when seen upon the screen be too high in proportion to their length. We hope to have an article on this subject at an early date.

Andrew Pringle.—We have forwarded the name and address to our American agents; they have a branch at Toronto, and this journal will be sent by them. Thanks.

W. C. Ledger.—Each subject will be treated in turn.

A. T. writes:—"Can you suggest a remedy for preventing the condensers steaming in a 45s. Optimus, as advertised in your journal? Is it on account of the cool air striking the case containing the condensers between the body and the part which receives the slides? I have drilled one hole in each side and two on the top through the outside case and the condensers, and now they steam sometimes. I also fixed a piece of sheet-iron at sides and over top of condensers to close it in. A friend in making a lantern slide held it before the fire when it was nearly dry; the result was a snow scene, the roofs of houses and tops of trees being white like snow. You might take some notice of this in the journal." *Answer.*—See our first article in this number about the condensers. The snow effect you mention may have been due to the melting of the gelatine. Examine it under a magnifying glass.

H. Fox.—Particulars in our next if possible.

D. Noakes.—Catalogue received. In our next.

Limelight.—Messrs. C. & F. Darker, Forest Hill, London.

E. S. R. writes:—"In reply to 'J. G. H.,' the 'choking up' is not an unfrequent affair. With the best of care this will sometimes happen. It is necessary to clean the jet out."